

(19) World Intellectual Property  
Organization  
International Bureau



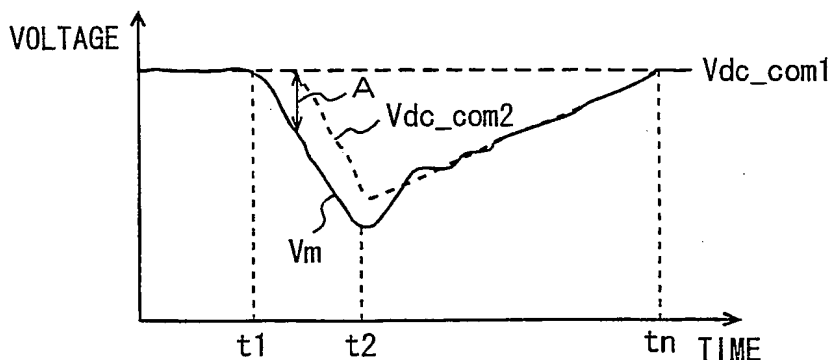
(43) International Publication Date  
10 February 2005 (10.02.2005)

PCT

(10) International Publication Number  
**WO 2005/013471 A1**

- (51) International Patent Classification<sup>7</sup>: **H02M 3/335**, 3/157
- (21) International Application Number:  
PCT/JP2004/007469 ✓
- (22) International Filing Date: 25 May 2004 (25.05.2004) ✓
- (25) Filing Language: English ✓
- (26) Publication Language: English ✓
- (30) Priority Data:  
2003-204874 ✓ 31 July 2003 (31.07.2003) JP ✓
- (71) Applicant (for all designated States except US): **TOYOTA JIDOSHA KABUSHIKI KAISHA** [JP/JP]; 1, Toyota-cho, Toyota-shi, Aichi 471-8571 (JP). ✓
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **OKAMURA, Masaki** [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi 471-8571 (JP).
- (74) Agents: **FUKAMI, Hisao** et al.; Fukami Patent Office, Mitsui Sumitomo Bank Minamimorimachi Bldg., 1-29, Minamimorimachi 2-chome, Kita-ku, Osaka-shi, Osaka 530-0054 (JP). ✓
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: VOLTAGE CONVERSION DEVICE AND COMPUTER-READABLE RECORDING MEDIUM HAVING PROGRAM RECORDED THEREON FOR COMPUTER TO CONTROL VOLTAGE CONVERSION



(57) Abstract: In a case where the deviation between a target voltage ( $V_{dc\_com1}$ ) and an output voltage ( $V_m$ ) is larger than a specified value ( $A$ ), a voltage command ( $V_{dc\_com2}$ ) of a voltage step-up converter (12) is calculated by adding the specified value ( $A$ ) to the output voltage ( $V_m$ ). When the output voltage ( $V_m$ ) having been decreasing starts to increase, the voltage command ( $V_{dc\_com2}$ ) is calculated in such a manner that the rate of change of the voltage

command ( $V_{dc\_com2}$ ) is equal to or smaller than a standard value. Using the calculated voltage command ( $V_{dc\_com2}$ ), feedback control of the voltage step-up converter is conducted in such a manner that the output voltage ( $V_m$ ) is equal to the target voltage ( $V_{dc\_com1}$ ).